GE
Intelligent Platforms

ICS-8554D

Rugged 4-channel, DC-Coupled 105 MHz ADC PMC Module with DDCs, Xilinx FPGA and PCI 64/66 Interface

Features

- 4 DC-coupled ADC channels: 14-bits @ 105 MHz
- 2 GrayChip GC4016 DDC ASICs
- 3M gate Xilinx Virtex-II FPGA
- 66 MHz, 64-bit PCI 2.2 DMA interface
- 2 Mbytes FIFO buffer
- Pn4 user I/O supports LVTTL or LVDS signaling levels
- Internal or external clock and trigger
- > 67 dB SNR and > 80 dB SFDR
- Multiple board synchronization
- Extensive application and technical support available
- Windows®, Linux® and VxWorks® device drivers

ICS-8554D Rugged 4-channel SDR receiver is a rugged derivative of the highly successful ICS-554D, a four channel DC-coupled digital IF receiver PMC module for Software Defined Radio (SDR) applications optimized to provide a high degree of functionality in a small, rugged package. By bundling substantial ADC, DDC, and FPGA resources in one PMC module, the ICS-8554D provides a powerful base band signal processing capability. Careful component selection and thermal management techniques allow this functionality to be maintained in demanding environments, supported by both air-cooled and conduction cooled versions.

While providing substantial DSP resources in its 3M gate FPGA, the ICS-8554D still provides high bandwidth I/O for communication with host systems. The 64/66 PCI interface provides data rates in excess of 400 MBytes/sec (aggregate sustained rate), while the Pn4 User I/O port allows even higher data rates and elimination of interrupt latencies. Approximately 95% of the Virtex-II FPGA is available for user applications, and these are supported by means of a comprehensive hardware development kit (HDK) for the Xilinx ISE Foundation development environment, enabling efficient development of new FPGA applications.

The ICS-8554D brings all the best attributes of the ICS-554D to the rugged application space, and improves on it by doubling the amount of FIFO storage onboard, and adding built in test (BIT) capability.

Software

Software device driver support is available for VxWorks, Linux and Windows. A set of application examples in 'C' is provided with each driver. A LabVIEW application is provided under Windows only.

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Specifications

Processor

- General
  - IEEE P1386.1 compatible PCI Mezzanine Card
  - Linux®, Windows® and VxWorks® software drivers
  - 11.8 watts typical power dissipation (depends on user FPGA contents)

Onboard Resources

- Xilinx Virtex-II FPGA (XC2V3000)
- 2 x GC4016 DDC (optional)
- 2 x 256k x 36 FIFO memories

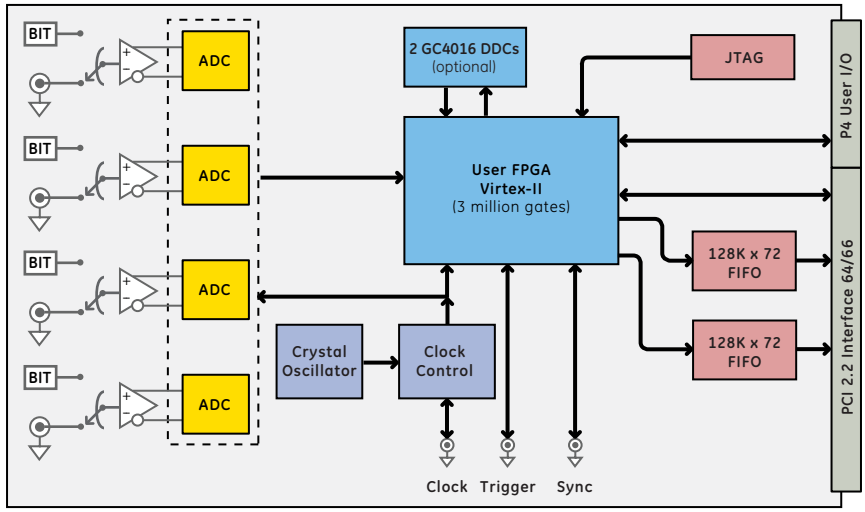
I/O Specifications

- PCI 2.2 64-bit, 66 MHz PCI bus interface
- All 64 user programmable I/O via Pn4 connector routed directly to FPGA as differential pairs
- User definable signaling levels on Pn4

Environmental

- Five build levels available. air and conduction cooled versions.
- -40 to +85°C operating temperature
- 95% non-condensing humidity

Block Diagram



Ordering Information

ICS-8554D-xOO	x: build level (1 – 5), with GC4016 DDCs
ICS-8554D-xO1	x: build level (1 – 5), without GC4016 DDCs
DRV-8554-VXW	Software device driver for VxWorks operating system
DRV-8554-LX	Software device driver for Linux operating system
DRV-8554-WIN	Software device driver for Windows operating system
DRV-8554-SCA	SCA compliant driver
HDK-8554	Hardware Development Kit for FPGA development by user

About GE Intelligent Platforms

GE Intelligent Platforms, a General Electric Company (NYSE: GE), is an experienced high-performance technology company and a global provider of hardware, software, services, and expertise in automation and embedded computing. We offer a unique foundation of agile, advanced and ultra-reliable technology that provides customers a sustainable advantage in the industries they serve, including energy, water, consumer packaged goods, government and defense, and telecommunications. GE Intelligent Platforms is a worldwide company headquartered in Charlottesville, VA and is part of GE Home and Business Solutions. For more information, visit www.ge-ip.com.

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